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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,286	03/31/2006	Masayuki Oikawa	287800US26PCT	5521
22850 7590 02/22/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
CHAN, CEDRIC A				
ART UNIT		PAPER NUMBER		
1797				
NOTIFICATION DATE		DELIVERY MODE		
02/22/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/574,286

Applicant(s)

OIKAWA ET AL.

Examiner

CEDRIC CHAN

Art Unit

1797

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-18 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-18 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 9 is objected to because of the following informalities: claim 9 recites (line 6, pg. 34) "into close contact the curved surface." It appears that the word, "with" should be inserted in between "contact" and "the" in the above recitation. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10, 12-18 and 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The independent claims recite many elements within their perambulatory clauses that appear to be integral to the definition of the invention, but do not recite the elements in the main body of the claims, i.e. after the transitional phrase (e.g., "comprising:"). As a result, these elements are not positively recited as being features of the claimed invention.

Moreover, many recited elements lack sufficient antecedent basis because the claims offer no positive recitation of these elements. For instance, in claim 1, the phrase, "the pair of concave portions" lacks sufficient antecedent basis because the body of the claim does not recite a "pair of concave portions" (a reference to said pair of

concave portions appears in the preamble of the claim, but, again, there is no positive recitation of the feature after the transitional phrase, "comprising:").

The above issues regarding antecedent insufficiency recurs throughout the claims, but may be resolved if the appropriate features are positively claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10, 12-18 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marumo et al. (US 2003/0000458) in view of Ju et al. (Korean Patent Publication 2000-0020879).

Marumo discloses a quartz member for semiconductor manufacturing as well as a method for metal analysis using said quartz member.

Fig. 11 shows an entire configuration of the apparatus of Marumo. The apparatus comprises a level base plate 2 having a circular opening 2a in the central portion thereof. In the opening 2a of the base plate 2, a quartz tube 3 is inserted through as a cylindrical treatment tube that is open at a lower end and has a flange portion 3a at the open end. A periphery portion of the flange portion 3a of the quartz tube 3 is removably attached to the base plate 2 through a manifold 4 (para. [0154]).

Downward of the quartz tube 3, a closing plate 50 for opening/closing a lower end opening thereof is disposed. On the closing plate 50, a wafer boat 51 for holding many pieces of semiconductor wafers level in multiple steps spaced in a vertical direction is disposed through a heat insulating mould 52. The closing plate 50 takes the wafer boat 51 into and out of the quartz tube 3, being connected to an elevator 53 for opening/closing the closing plate 50 (para. [0157]).

In operation, the closing plate 50 is opened, the wafer boat 51 holding the semiconductor wafers being introduced into the quartz tube 3 together with the heat insulating mould 52 due to an ascending movement of the closing plate 50. The

treatment gas is introduced through the gas inlet tube portion 3b to start treating (para. [0158]).

FIG. 11

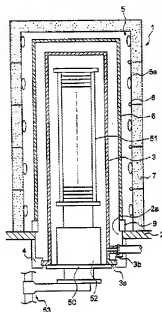


Fig. 11 is reproduced above, for Applicant's reference.

The analysis method comprises a first step of exposing a layer to be analyzed, a second step of chemically decomposing the layer to separate, a third step of analyzing an amount of metal, a fourth step of obtaining a volume of the layer, a fifth step of exposing anew a layer to be analyzed, and a sixth step of obtaining a concentration distribution of diffused metal. In the first step of exposing the layer to be analyzed, the layer to be analyzed at a desired depth in a quartz specimen is exposed. In the second step of chemically decomposing the layer to separate, after the chemical decomposition of the layer, a decomposition product is separated from the quartz specimen. In the third step of analyzing an amount of metal, the amount of metal in the separated decomposition product is analyzed. In the fourth step of obtaining a volume of the layer,

the volume of the layer is obtained from a volume change between the quartz specimens before the chemical decomposition of the layer and after the separation of the decomposition product. In the fifth step of exposing anew a layer to be analyzed, a layer to be analyzed furthermore inside in a thickness direction than the layer to have been analyzed is exposed. In the sixth step of obtaining a concentration distribution of diffused metal, the second to fifth steps are repeated to obtain the concentration distribution of the metal diffused in a thickness direction of the quartz specimen (see paragraph [0047]).

Marumo does not disclose the exact configuration of the "examination assistant device" that is claimed in the instant application. Accordingly, Marumo's method does not involve specifically the examination assistant device claimed.

Applicant-cited patent publication of Ju et al. (Korean Patent Publication 2000-0020879) teaches just such an examination assistant device.

Ju's device includes a pair of end plates (64) configured to engage with a quartz pole as taught in Marumo's disclosure and recited in the instant claims. A frame part (61) connects the pair of end plates, and the structure comprises an open area/region which is fully capable of receiving solution therein (see Fig. 4 of Pub. 2000-0020879).

It would have been obvious to incorporate the device taught and described by Ju in 2000-0020879, into the apparatus described by Marumo, in order to achieve the inspection of semiconductor wafers in Marumo's apparatus. Ju teaches, for example, that the wafer boat (which would be compatible with Marumo's apparatus -- see Marumo, Fig. 11 & Ju, Fig. 2) can prevent cracks and errors in wafer handling (see

Abstract of 2000-0020879). Marumo also suggests the use of a wafer boat, as discussed previously.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CEDRIC CHAN whose telephone number is (571)270-3721. The examiner can normally be reached on Monday-Thursday 8:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. C./
Examiner, Art Unit 1797

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797